



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,216	07/18/2003	Bilal Ahmad	CIS03-37(7764)	2870

47654 7590 11/30/2006

DAVID E. HUANG, ESQ.
BAINWOOD HUANG & ASSOCIATES LLC
2 CONNECTOR ROAD
SUITE 2A
WESTBOROUGH, MA 01581

EXAMINER

DINH, TUAN T

ART UNIT PAPER NUMBER

2841

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,216

Applicant(s)

AHMAD, BILAL

Examiner

Tuan T. Dinh

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 2-5, 14-17 and 25-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-8, 11-13, 18-20 and 23-34 is/are rejected.
- 7) ☒ Claim(s) 9-10, 21-22, 30-31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Noted of the claim language:

Examiner is considered the term "configured to" as well defined as an intended use limitation. The claim limitation, that employ phrases of the type "configured to" is typical of claim limitation, which may not distinguish over prior art according to the principle. It has been held that the recitation that an element is "configured to" perform or is "capable of being" performing a function is not a positive limitation but only requires the ability to so perform, see *In re Venezia*, 189 USPQ 149 (CCPA 1976).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6-8, 11-13, 18-20, 23-24, and 28-29, 32-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Haug (U.S. Patent 6,909,052).

As to claim 1, Haug discloses a circuit board (26, column 4, line 41) as shown in figures 1-5 comprising:

a first signal layer (30, column 4, lines 55-56) having a signal conductor (46, column 4, lines 66-67 having traces 48, 50) and a contact pad (a pad formed on a PTH 66) in electrical communication with the signal conductor (46),

a second signal layer (42, column 4, line 64) substantially parallel to the first signal layer (30), the second signal (42) having a conductive plane defining an opening (a clearance hole 76, see figure 1), the opening substantially aligned with the contact pad, and the opening configured to (capable of being) minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad; and

a non conductive layer (36, 38) disposed between the first and second signal layers (30, 42).

As to claim 13, Haug discloses an electronic system (20 as shown in figures 1-5 comprising:

a power supply (22) having voltage and ground terminals (23A, 23B);

an interconnect (24) in electrical communication with the voltage and ground terminals (23A, 23B) of the power supply (22); and

a circuit board (26) having:

a first signal layer (30) having a signal conductor (48A, 50A) and a contact pad (see claim 1) in electrical communication with the signal conductor,

a second signal layer (42) substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening (the clearance hole 76, see figure 1), the conductive plane in electrical communication with one of the voltage and ground terminals (23A, 23B) of the power supply (22) through the

interconnect (24), the opening substantially aligned with the contact pad, and the opening configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad, and

a nonconductive layer (36, 38) disposed between the first and second signal layers (30, 42).

As to claim 28, Haug discloses a circuit board (26) as shown in figures 1-5 comprising:

a first signal layer (30) having a signal conductor means (48A, 50A) and a contact pad means (see claim 1) in electrical communication with the signal conductor,

a second signal layer (42) substantially parallel to the first signal layer (30), the second signal layer having a conductive plane defining an opening means (76, see claim 1) for substantially normalizing an impedance of the signal conductor means and an impedance of the contact means, the opening means (76) substantially aligned with the contact pad means, and the opening means minimizing a signal reflection of a signal transmitted through the signal conductor means and across the contact pad means; and

a non-conductive layer (36, 38) disposed between the first and second signal layers (30, 42).

As to claims 6, 18, 29, Haug discloses in figure 1 the contact pad (the pad on the PTH 66) comprises a pad center axis (the center axis of the PTH) and wherein the opening defined by the conductive plane, comprises an opening center axis, see figure 1, the pad center axis substantially perpendicular to the first signal layer (30), the

Art Unit: 2841

opening center axis substantially perpendicular to the second signal layer (42), and the pad center axis the opening center axis oriented substantially parallel and defining an offset an distance between the pad center axis and the opening center axis.

As to claims 7, 19, Haug discloses the signal conductor (48A, 50A), see figure 1 comprises a centerline and wherein the pad center axis of the contact pad substantially intersects the centerline of the signal conductor.

As to claims 8, 20, Haug discloses the signal conductor (48A, 50A), see figure 1 comprises a centerline and wherein the opening center axis of the opening defined by the conductive plane substantially intersects the centerline of the signal conductor.

As to claims 11, 23, Haug discloses the contact pad as shown in figure 1 comprises a testing pad that allows attachment of a circuit board testing device (a power device 22) to the circuit board (26).

As to claims 12, 24, Haug discloses the contact pad comprises a circuit board component connection pad (23A, 23B) that allows attachment of a circuit board component (22) to the circuit board (26).

As to claims 32-33, Haug discloses the opening (76) defined by the conductive plane extends from a first face of the second signal layer (42) facing the nonconductive layer (36, 38) to a second face of the second signal layer, the second face of the second signal layer opposing the first face of the first signal layer (30); and the nonconductive layer being disposed across the first face of the second signal layer such that the nonconductive layer covers the opening defined by the conductive plane.

Allowable Subject Matter

3. Claims 9-10, 21-22, and 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 03/09/06 have been fully considered but they are not persuasive.

Applicant argues:

For claims 1, 13, and 28, Haug does not disclose "an opening substantially aligned with a contact pad and configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad".

Examiner disagrees. Haug clearly discloses the first and second signal layers (30, 42), the first signal layer (30) having traces or circuitries and pads (the pads are provided for connecting the components formed on top layer of the PCB, see figure 2), the second signal layer (42) having a clearance hole (figure 1 shows the clearance hole (76), which includes an opening around the PTH (66) or opening of the clearance hole, and the non-conductive layer (36, 38) formed between the two signal layers. The PTH of the clearance hole having space or gap substantially aligned to the pad and dividing spaced to the signal layer (42), the clearance hole being reflected the signal. Therefore, the clearance hole is capable of being to do so. Thus, the Haug reference meets all of the limitations of the claims. Therefore, the examiner believes the rejection is proper.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Enad Elvin can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Tuan Dinh', with a stylized flourish extending from the end.

Tuan Dinh
November 20, 2006.